REMARKS

Claim 4 is pending in the application and presently stands rejected.

Claim 4 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kurihashi et al. (JP 63-194543) and Schorm et al. (5,341,561).

Analysis

The present invention is directed to the use of conductor wires having polymorphic cross-sections. The use of polymorphic cross-sections is advantageous because it increases the efficiency of the space within the slot portions. In particular, even if the dimensions of the slot portions are not rectilinear, i.e., evenly spaced along its length, the polymorphic shapes allow the wires to utilize the greatest efficiency of space.

Neither of the cited references teaches or suggests this feature. Both references disclose a plurality of wires having similar cross-sections, i.e., rectangular. However, if the space defined within the slot is not rectangular, the space cannot be used efficiently. Thus, the present invention allows for the most efficient use of space, even when the slot space is irregular, by the use of polymorphic cross-sections.

The Examiner relies on the rectangular shapes of the wires in the references, however, this is not equivalent to the polymorphic cross-sections of the present invention. The rectangular shapes of the prior art generally consist of two pairs of opposing parallel sides, right angles, and other features common to rectangular shapes. In Schorm all of the copper conductors 9 accommodated within the groove 6 have the same cross-section, and the outer peripheral shape of subconductor bundles 8 constructed with the copper conductors 9 does not correspond to the

inner peripheral shape of the groove 6. Namely, the bundles 8 are accommodated within the groove 6 so as to leave space between the bundles 8 and the groove 6, as shown in Figures 3 to 7.

However, the polymorphic characteristics of the present invention allow the wires to be shaped in non-linear arrangements, as shown by example in Fig. 11, so as to be morphed into different shapes. With such varying shapes, the non-linear areas of the slots can be maximized because the wires have varying dimensions, and certain shapes efficiently fit within certain portions of the slot.

In view of the foregoing, claim 4 is not rendered obvious by the prior art.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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Date: September 19, 2002

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claim 4 is amended as follows:

4. (Three Times Amended) A stator of an AC generator for use in a vehicle comprising:

a cylindrical stator core in which a plurality of tooth portions are provided at intervals along the inner circumference of a cylindrical core portion and a plurality of slot portions are each formed between adjacent tooth portions; and

a stator coil incorporated in said stator core, said stator coil having a group of coils constituted by predetermined numbers of turns of conductor wires and including a plurality of rectilinear portions and coil end portions interconnecting the end portions of adjacent rectilinear portions, said rectilinear portions being sequentially accommodated in the slot portions every predetermined number of slots and said coil end portions being protruded axially outwardly from an end surface of said stator core;

wherein each of said rectilinear portions, accommodated within said slot portions, has a polymorphic cross-section so that said rectilinear portions have varying dimensions; and

wherein the ratio of the overall cross-sectional area of the group of said rectilinear portions accommodated within said slot portion, relative to the cross-sectional area of said slot portion, is not less than 75%,

wherein a greater part of the group of rectilinear portions of polymorphic cross section which are accommodated within said slot portion are directed such that a longitudinal axis of the cross-section thereof extends in the radial direction of said stator core.